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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590 10/18/2004 Finnegan, Henderson, Farabow Garrett & Dunner, L.L.P. 1300 I Street, N.W. Washington, DC 20005-3315			EXAMINER CHANG, CHING	
			ART UNIT 3748	PAPER NUMBER

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/697,437

Applicant(s)

AFJEH ET AL.

Examiner

Ching Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-A13)  
Paper No(s)/Mail Date 7/28/04
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

This Office action is in response to the amendment filed on August 9, 2004. New claims 21-27 are added as requested.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

More specifically, "mechanically contact the intake valve" in claims 1, 12, and 17 is new matter, "end" in claims 1, 12, 17, 21, and 26 is new matter, and "selectively hold" in claims 21 and 26 is new matter.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. ***Claims 21, and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Weber et al. (US Patent No. 6,688,280).***

Weber discloses an engine (110) valve actuation system (214) and a method of using it for the engine having a piston (212) movable through an intake stroke followed by a compression stroke, comprising: an intake valve (218) moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid; a cam assembly (232, 234, 236) configured to move the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (238) configured to selectively hold the intake valve in position between the first end position and the second end position (See Col. 5, line 58 through Col. 6, line 47; Col. 9, line 59 through Col. 11, line 6); wherein the electromagnetic actuator

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includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid; further including a pivotable rocker arm (226) operably coupling the cam assembly with the intake valve; wherein the core includes an end configured to selectively engage the rocker arm opposite to the intake valve; further including a controller (244) configured to move the armature and the core between a first position and a second position (See Col. 4, line 58 through Col. 6, line 47; Col. 9, line 59 through Col. 11, line 6).

The applied Weber reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**5. *Claims 21, and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hara et al. (US Patent No. 6,257,182).***

Hara discloses an engine valve actuation system (24) and a method of using it for the engine (See Fig. 1 and 8) having a piston movable through an intake stroke followed by a compression stroke, comprising: an intake valve (23) moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid; a cam assembly (56, 57) configured to

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move the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (24) configured to selectively hold the intake valve in position between the first end position and the second end position (See Col. 2, line 58 through Col. 7, line 64); wherein the electromagnetic actuator includes a solenoid coil (31, 32) and an armature (30) coupled with a core (38), the armature and the core being movable together relative to the solenoid; and further including a pivotable rocker arm (56) operably coupling the cam assembly with the intake valve; wherein the core includes an end (See Fig. 13) configured to selectively engage the rocker arm opposite to the intake valve (See Col. 7, line 65 through Col. 10, line 18); and further including a controller (40) configured to move the armature (30) and the core (38) between a first position and a second position.

6. ***Claims 21, and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Takizawa et al. (US Patent 4,258,671).***

Takizawa discloses an engine valve actuation system and a method of using it for the engine having a piston movable through an intake stroke followed by a compression stroke, comprising: an intake valve (7) moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid; a cam assembly (41) configured to move the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (43) configured to selectively hold the intake valve in position between the first end position and the second end position; wherein the

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electromagnetic actuator includes a solenoid coil (48) and an armature coupled with a core (46), the armature and the core being movable together relative to the solenoid; further including a pivotable rocker arm (13) operably coupling the cam assembly with the intake valve; wherein the core includes an end (45) configured to selectively engage the rocker arm opposite to the intake valve; further including a controller (73, 71) configured to move the armature and the core between a first position and a second position; the said method includes controllably moving a coupled armature and core (46) of the electromagnetic actuator between a first position and a second position.

**7. *Claims 21, and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoyama et al. (US Patent 6,647,935).***

Aoyama discloses an engine valve actuation system (20, 40) and a method of using it for the engine having a piston movable through an intake stroke followed by a compression stroke, comprising: an intake valve (1) moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid; a cam assembly (20) configured to move the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (21, 22) configured (through ECU 11) to selectively hold the intake valve in position between the first end position and the second end position; wherein the electromagnetic actuator includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid; further including a

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pivotable rocker arm (24) operably coupling the cam assembly with the intake valve; wherein the core includes an end (See Fig. 3) configured to selectively engage the rocker arm opposite to the intake valve; further including a controller (11) configured to move the armature and the core between a first position and a second position; the said method includes controllably moving a coupled armature and core of the electromagnetic actuator between a first position and a second position.

8. ***Claims 21, and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Uehara et al. (US Patent 6,691,654).***

Uehara discloses an engine valve actuation system (1) and a method of using it for the engine having a piston movable through an intake stroke followed by a compression stroke, comprising: an intake valve (11) moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid; a cam assembly (15, 17, 23) configured to move the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (34) configured (through ECU 35) to selectively hold the intake valve in position between the first end position and the second end position; wherein the electromagnetic actuator includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid; further including a pivotable rocker arm (17) operably coupling the cam assembly with the intake valve; wherein the core includes an end configured to selectively engage the rocker arm opposite to the



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intake valve( See Fig. 2); further including a controller (35) configured to move the armature and the core between a first position and a second position; the said method includes controllably moving a coupled armature and core of the electromagnetic actuator between a first position and a second position.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. ***Claims 1, 12-13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (US Patent 4,258,671) in view of Rose (US Patent 5,529,030).***

Takizawa discloses an engine valve actuation system and a method of using it, comprising: a block defining at least one cylinder and a cylinder head having at least one intake passageway leading to the at least one cylinder (See Col. 2, line 45 through line 57; Fig. 1); at least one intake valve (7) moveable between a first end position to prevent a flow of fluid through the at least one intake passageway (5) and a second end position to allow a flow of fluid through

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the at least one intake passageway; a cam assembly (41) connected to the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (43) configured to selectively modify a timing of the intake valve in moving from the second position to the first position; the said method includes controllably moving a coupled armature (46) and core (45) of the electromagnetic actuator between a first end position and a second end position.

Takizawa discloses all the claimed limitations as discussed except the said electromagnetic actuator being mechanically contact the said intake valve.

The patent to Rose on the other hand, teaches that it is conventional in the art of a fluid actuator, to have utilized an electromagnetic actuator (30, 44) configured to mechanically contact the intake valve (11), in order to provide an variable valve timing and duration of lift.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the arrangement of a selectively mechanically contact between the electromagnetic actuator and the intake valve as taught by Rose in the Takizawa device and method, since the use thereof would provide an improved engine valve actuator and the method of using it, with a more direct and effective timing control on the intake valve movement.

**11. Claims 1, 12-13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (US Patent 6,688,280) in view of Rose (US Patent 5,529,030).**

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Weber discloses an engine (110) valve actuation system (214) and a method of using it, comprising: a block (111) defining at least one cylinder (112) and a cylinder head (211) having at least one intake passageway (208) leading to the at least one cylinder; at least one intake valve (218) moveable between a first end position to prevent a flow of fluid through the at least one intake passageway and a second end position to allow a flow of fluid through the at least one intake passageway; a cam assembly (232, 234, 236) connected to the intake valve to move the intake valve between the first position and the second position; and an electromagnetic actuator (238) configured to selectively modify a timing of the intake valve in moving from the second end position to the first end position; wherein the electromagnetic actuator includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid; further including a pivotable rocker arm (226) operably coupling the cam assembly with the intake valve; wherein the core includes an end configured to selectively engage the rocker arm opposite to the intake valve; further including a controller (244) configured to move the armature and the core between a first position and a second position; wherein the controller is configured to apply a first current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to modify the timing of the intake valve; wherein the controller is configured to apply a second current to the solenoid coil to move the armature and the core from the second position to the first position to disengage

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from the rocker arm, the second current being opposite to the first current (See Col. 4, line 61 through Col. 6, line 47; Col. 9, line 59 through Col. 11, line 6).

Weber discloses all the claimed limitations as discussed except the said electromagnetic actuator being mechanically contact the said intake valve.

The patent to Rose on the other hand, teaches that it is conventional in the art of a fluid actuator, to have utilized an electromagnetic actuator (30, 44) configured to mechanically contact the intake valve (11), in order to provide an variable valve timing and duration of lift.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the arrangement of a selectively mechanically contact between the electromagnetic actuator and the intake valve as taught by Rose in the Weber device and method, since the use thereof would provide an improved engine valve actuator and the method of using it, with a more direct and effective timing control on the intake valve movement.

The applied Weber reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3)

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an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

**12. *Claims 1, 12-13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (US Patent 6,257,182) in view of Rose (US Patent 5,529,030).***

Hara discloses an engine valve actuation system (24) and a method of using it, comprising: a block defining at least one cylinder (See Figs. 1 and 8) and a cylinder head (21) having at least one intake passageway (22) leading to the at least one cylinder; at least one intake valve (23) moveable between a first end position to prevent a flow of fluid through the at least one intake passageway and a second end position to allow a flow of fluid through the at least one intake passageway; a cam assembly (56, 57) connected to the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (24) configured to selectively modify a timing of the intake valve in moving from the second position to the first position; wherein the electromagnetic actuator includes a solenoid coil (31, 32) and an armature (30)

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coupled with a core (38), the armature and the core being movable together relative to the solenoid; further including a pivotable rocker arm (59b) operably coupling the cam assembly with the intake valve; wherein the core includes an end configured to selectively engage the rocker arm opposite to the intake valve; further including a controller (40) configured to move the armature and the core between a first position and a second position; wherein the controller is configured to apply a first current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to modify the timing of the intake valve; wherein the controller is configured to apply a second current to the solenoid coil to move the armature and the core from the second position to the first position to disengage from the rocker arm, the second current being opposite to the first current; wherein the controller is configured to apply a third current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to slow a closing velocity of the intake valve (See Col. 7, line 65 through Col. 11, line 55; ABSTRACT).

Hara discloses all the claimed limitations as discussed except the said electromagnetic actuator being mechanically contact the said intake valve.

The patent to Rose on the other hand, teaches that it is conventional in the art of a fluid actuator, to have utilized an electromagnetic actuator (30, 44) configured to mechanically contact the intake valve (11), in order to provide an variable valve timing and duration of lift.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the arrangement of a selectively mechanically contact between the electromagnetic actuator and the intake valve as taught by Rose in the Hara device and method, since the use thereof would provide an improved engine valve actuator and the method of using it, with a more direct and effective timing control on the intake valve movement.

13. ***Claims 1, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US Patent 6,647,935) in view of Rose (US Patent 5,529,030).***

Aoyama discloses an engine valve actuation system (20, 40) and a method of using it, comprising: a block (4) defining at least one cylinder (5) and a cylinder head having at least one intake passageway leading to the at least one cylinder (See Figs 1-2); at least one intake valve (1) moveable between a first end position to prevent a flow of fluid through the at least one intake passageway and a second end position to allow a flow of fluid through the at least one intake passageway; a cam assembly (24) connected to the intake valve to move the intake valve between the first end position and the second end position; and an electromagnetic actuator (22, 42) configured to selectively modify a timing of the intake valve in moving from the second position to the first position.

Aoyama discloses all the claimed limitations as discussed except the said electromagnetic actuator being mechanically contact the said intake valve.

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The patent to Rose on the other hand, teaches that it is conventional in the art of a fluid actuator, to have utilized an electromagnetic actuator (30, 44) configured to mechanically contact the intake valve (11), in order to provide an variable valve timing and duration of lift.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the arrangement of a selectively mechanically contact between the electromagnetic actuator and the intake valve as taught by Rose in the Aoyama device and method, since the use thereof would provide an improved engine valve actuator and the method of using it, with a more direct and effective timing control on the intake valve movement.

**14. Claims 1, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. (US Patent 6,691,654) in view of Rose (US Patent 5,529,030).**

Uehara discloses an engine valve actuation system (1) and a method of using it, comprising: a block defining at least one cylinder and a cylinder head (s) having at least one intake passageway leading to the at least one cylinder (See Figs 1-2); at least one intake valve (11) moveable between a first end position to prevent a flow of fluid through the at least one intake passageway and a second end position to allow a flow of fluid through the at least one intake passageway; a cam assembly (15, 17, 23) connected to the intake valve to move the intake valve between the first end position and the second end position; and an



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electromagnetic actuator (34, 35) configured to selectively modify a timing of the intake valve in moving from the second position to the first position.

Uehara discloses all the claimed limitations as discussed except the said electromagnetic actuator being mechanically contact the said intake valve.

The patent to Rose on the other hand, teaches that it is conventional in the art of a fluid actuator, to have utilized an electromagnetic actuator (30, 44) configured to mechanically contact the intake valve (11), in order to provide an variable valve timing and duration of lift.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the arrangement of a selectively mechanically contact between the electromagnetic actuator and the intake valve as taught by Rose in the Uehara device and method, since the use thereof would provide an improved engine valve actuator and method of using it, with a more direct and effective timing control on the intake valve movement.

**15. Claims 2-11, 14-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber in view of Rose (as applied to claims 1, 12, and 17 above), and further in view of Sturman et al. (US Patent No. 5,720,261).**

The modified Weber device and method discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

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The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the modified Weber device and method, since the use thereof would provide an improved engine valve actuation system and method of using it.

**16. *Claims 2-11, 14-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara in view of Rose (as applied to claims 1, 12, and 17 above), and further in view of Sturman et al. (US Patent No. 5,720,261).***

The modified Hara device and method discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the modified Hara device and method, since the use thereof would provide an improved engine valve actuation system and method of using it.

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**17. *Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber (as applied to claim 21 above) in view of Sturman et al. (US Patent No. 5,720,261).***

Weber discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the Weber device, since the use thereof would provide an improved engine valve actuation system.

The applied Weber reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in

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the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

**18. *Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara (as applied to claim 21 above) in view of Sturman et al. (US Patent No. 5,720,261).***

Hara discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the Hara device, since the use thereof would provide an improved engine valve actuation system.

**19. *Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa (as applied to claim 21 above) in view of Sturman et al. (US Patent No. 5,720,261).***

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Takizawa discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the Takizawa device, since the use thereof would provide an improved engine valve actuation system.

**20. *Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (as applied to claim 21 above) in view of Sturman et al. (US Patent No. 5,720,261).***

Aoyama discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the Aoyama device, since the use thereof would provide an improved engine valve actuation system.

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21. ***Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara (as applied to claim 21 above) in view of Sturman et al. (US Patent No. 5,720,261).***

Uehara discloses the invention, however, fails to disclose the electromagnetic actuator being a latching solenoid actuator.

The patent to Sturman on the other hand, teaches that it is conventional in the art of a valve controller system, to utilize a controller (See Figs. 8-20) with a latching solenoid actuator (118, 162) to control a valve movement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the latching solenoid actuator as taught by Sturman in the Uehara device, since the use thereof would provide an improved engine valve actuation system.

### ***Response to Arguments***

22. Applicant's arguments with respect to claim\*\*\* have been considered but are moot in view of the new ground(s) of rejection.

In addition, the Attorney's REMARKS " for the personal interview of July 28, 2004.....the agreements reached during the interview ", the Examiner disagrees. As a matter of fact, no any agreement has been reached in the interview (See Interview Summary, a copy of it has been provided to Attorney Stockett on the aforementioned date).

**Conclusion**

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The

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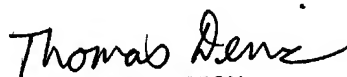
fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Ching Chang

  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700